

MARTIN ENGLER,
EDMUND FOEHR and
WALTER SCHUMACHER-RUF
Serial No.: 10/539,305

IN THE SPECIFICATION:

Please conform the Specification to U.S. practice requirements by entering the following amendments.

1. On page 1, after the title of the invention and before paragraph [0001] please add the following heading: --

BACKGROUND OF THE INVENTION

(1) Field Of The Invention -- .

2. On page 1, please amend paragraph [0001] as follows: --

[0001] The invention relates to an antifriction bearing ~~according to the preamble of Claim 1~~ with integrated lubricating material for lubricating parts that move relative to each other, in particular with a respective inner ring that exhibits a running path and an outer ring between which rolling bodies, in particular ball bearings are arranged. More particularly the invention pertains to an antifriction bearing with an integrated lubricating material for lubricating parts in which one part is an inner ring and the other part is an outer ring between which are bearing balls and where at least a part of the surface of at least one of the parts exhibits a coating of lubricant. High-

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precision ball bearings with $n \cdot D_m \geq \text{mill}$ ($n = \text{speed [RPM]}$, $D_m =$
reference circle [mm]) have thus far been used for fast-running
devices like compressors, turbines, machining spindles, ball
bearings, turbomolecular pumps or the like. Such In contrast to
the invention such prior art bearings are routinely lubricated
with oil. --

3. On page 1, before paragraph [0002] please add the
heading: --

(2) Description Of Related Art Including

Information Disclosed Under 37 C.F.R. 1.97 And 1.98 --

4. On page 2, before paragraph [0006] please add the
heading: --

BRIEF SUMMARY OF THE INVENTION -- .

5. On page 3, before paragraph [0007] please approve the
deletion of the heading: 'Description of the Invention'.

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6. On page 3, please amend paragraph [0007] as follows: --

[0007] This object is achieved according to the invention by ~~Claim 1~~ an antifriction bearing with integrated lubricating material for lubricating parts that move relative to each other, in particular with a respective inner ring that exhibits a running path and an outer ring, between which rolling bodies, in particular bearing balls, are arranged, characterized in that at least a part of the surface of at least one of the parts exhibits a coating of lubricant. Advantageous embodiments are ~~described in the subclaims~~ achieved with an antifriction bearing in accordance with the invention where $n \cdot D_m \geq 1$ mill. (n = speed [RPM], D_m = reference circle [mm]), where the lubricant is designed to be conveyed from the part carrying the lubricant coating to the uncoated part in operation, where the lubricant and the counter surface of the uncoated part are designed so that the lubricant adheres to the countersurface of the uncoated part, where the coating exhibits a varying composition from the side of the component to be coated toward the free surface, where the amount of lubricant on the free surface of the coating is increased with respect to the side of the component to be coated, where the coating encompasses at least a carrier layer connected

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with the surface of the coated part, and at least one lubricant layer, where the lubricant from the coating is a solid lubricant, where the lubricant has constituents incorporated into the coating that assume a liquid state during operation, where the coating encompasses a metal-doped, diamond-like carbon layer DLC, where the coating encompasses a single or multi-sheet polymer layer, where a metallic carrier layer is applied to one of the parts, where the entire coating has additional functional layers of which one is pressure-stabilizing, where one or more coatings have internal dampening, where the electrical resistance of the coating is altered by wear, where one of the several layers of the coating has an electrically insulating effect, where the coating differs visually from the basic material, where the visual properties of the coating are altered by wear, where the coating causes the surface hardness to decrease or remain the same, where at least one component of an antifriction bearing is provided with a corresponding coating, where at least one component of a sliding bearing is provided with a coating, where an additional lubricant is provided exclusively on the contacting surfaces of the parts, where the additional lubricant has high adhesive and cohesive forces, where an additional, second unbound lubricant is present, where the lubricant is designed as a carrier for the lubricant(s), where the coating and/or the additional lubricants can be sterilized, where the lubricant of

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the coating and/or the additional lubricant are selected in such a way as to be compatible with a lubricant according to prior art, and where the lubricants consist of several layers. --

7. On page 3, please amend paragraph [0008] as follows: --

[0008] An antifriction bearing that requires no lubricant supplied from outside is fabricated using ~~the features according to the invention as described in Claim 1,~~ a bearing with an integrated lubricating material for parts that move relative to each other in which at least a portion of the surface of at least one of the parts is coated with a lubricant. --

8. On page 13, please amend paragraph [0047] as follows: --

[0047] The drawings show exemplary embodiments of the invention. Shown on:

Fig. 1 is an upper casing of a dental turbine, longitudinal section,

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Fig. 2 is an antifriction bearing with shaft and gearing,
partially in longitudinal section,

Fig. 3 is the structural design of a multifunctional hybrid
layer, and

~~Fig. 4 is a section~~ Figs. 4a and 4b are sections through
bearing means designed according to the invention. --

9. On page 3, before paragraph [0048] please change the
heading, 'Exemplary Embodiment,' to read --

DETAILED DESCRIPTION OF THE INVENTION INCLUDING BEST

MODE -- .